REMARKS

Claims 1-29 are now pending in the present application. Claims 1-25 were rejected by the Examiner in an Office Action dated 01/31/2003. Claims 1, 6, 13, 18 and 25 have been amended, and Claims 26-29 have been added, herewith. Reconsideration and examination of the pending claims is respectfully requested.

I. 35 U.S.C. § 102, Anticipation

The Examiner has rejected Claims 1-6, 11-18 and 23-25 under 35 U.S.C. § 102 as being anticipated by U.S. Patent 6,240,529 to Kato. This rejection is respectfully traversed.

Generally speaking, the claimed invention in Claims 6, 18, 28 and 29 is a debugging method and system for a plurality of processes, whereas the cited Kato reference is directed to debugging a single program (see, e.g. Kato, Col. 7, lines 11-18). Processes are very different from programs, and techniques for one do not inherently work with the other because the state information is very different. For example, a plurality of processes can run concurrently, and have unique ways for communicating or otherwise passing information between them. A program is useful for independent, self-contained programs with no interactions with other programs. While a program may call subroutines, the state of the program is placed on a stack and the program counter is modified to the starting address of the subroutine. When the subroutine completes, it issues a Return command which restores the main program's state from the stack and the program counter is modified to be the next instruction of the main program. This is in contrast to a system having a plurality of processes running concurrently, where each process has its own state of open files and inter-processor communication such as signal state, pipes, message queues, semaphores, etc. These distinctions between programs and processes are well known to those of ordinary skill in the art.

Generally speaking, the claimed invention in Claims 1, 13 and 25 provides the ability to retrieve a process state in response to a predefined event. This greatly expands the potential functionality of a debugger by allowing complete automation of a checkpoint/restore sequence with automatic modification of variables, etc. (see Applicants Specification at page 16, line 28 – page 17, line 3).

Claims 1, 13 and 25 has been amended to recite that the stored process state is retrieved in response to a predefined event. In contrast, the cited reference requires a manual restoration of a state storage file as selected by a user from a list of existing files (Kato Col. 4, lines 20-24; Col. 8, lines 29-35; Figure 4; Col. 10, lines 3-10; Col. 11, lines 17-29). Kato discusses problems with retrieving a state storage file at Col. 4, line 62 – Col. 5, line 11, but this retrieval is responsive to a user input command (Kato Col. 4, lines 20-24). This claimed feature advantageously allows for a process to automatically run repeatedly between a checkpoint and breakpoint using a plurality of register or memory variable values to thereby improve debugging capabilities (Specification page 16, line 28 – page 17, line 3).

Nor would it be obvious to modify Kato to include such an automated retrieval of state information. Kato teaches that state information can be stored when a certain event occurs (Col. 9, lines 64-67), but requires manual user intervention in the restore of state information (Col. 10, lines 3-10; Col. 11, lines 17-29). Since Kato was aware of a desire to automatically store state information, but yet provided no solution for automatic retrieval of state information, it must not have been obvious to Kato as to how to accomplish this. In addition, Kato's express purpose to improve retrieval of state information is to simultaneously store situation information in a storage situation management file when state information is stored, to facilitate determining which among a plurality of existing state storage files should be selected by the user (Col. 5, lines 35-48). Modifying Kato in accordance with the claimed invention would defeat this expressed purpose.

Applicants traverse the rejection of Claims 2-5, 11, 12, 14-17, 23 and 24 for similar reasons to those given above regarding independent Claims 1, 13 and 25.

Claims 6 and 18 have been amended to be in independent form, and now include features from respective original Claims 1 and 13. Claims 6 and 18 recite 'wherein the process has control over at least one child process and the process state includes a process descriptor for each of the at least one child process'. The Examiner cites Kato Col. 8, lines 16-19 as teaching of "a function to manage a situation upon storage of a debugged state is further added...", which reads on Claims 6 and 18 (according to the Examiner). Applicants respond by showing that a situation management function does not read on

the claimed feature of 'wherein the process has control over at least one child process and the process state includes a process descriptor for each of the at least one child process'. For a prior art reference to anticipate in terms of 35 U.S.C. 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). As every element is not identically shown, Claims 6 and 18 are shown to have been erroneously rejected by the Examiner under 35 U.S.C. 102(b).

Therefore, the rejection of Claims 1-6, 11-18 and 23-25 under 35 U.S.C. § 102 has been overcome.

II. 35 U.S.C. § 103, Obviousness

A. The Examiner has rejected Claims 7-9 and 19-21 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent 6,240,529 to Kato, and further in view of U.S. Patent 5,560,009 to Lenkov et al. This rejection is respectfully traversed for similar reasons to those given above regarding Claims 1 and 13, of which these claims ultimately depend upon.

Therefore, the rejection of Claims 7-9 and 19-21 under 35 U.S.C. § 103 has been overcome.

B. The Examiner has rejected Claims 10 and 12 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent 6,240,529 to Kato, and further in view of U.S. Patent 6,412,106 to Keask et al. This rejection is respectfully traversed for similar reasons to those given above regarding Claim 1, of which these claims depend upon.

Therefore, the rejection of Claims 10 and 12 under 35 U.S.C. § 103 has been overcome.

III. Newly Added Claims

Claims 26-29 have been added herewith. Claims 26 and 27 are directed to the features discussed at least at Specification page 16, line 28 – page 17, line 3. Claim 28 is directed to the features discussed at least at Specification page 9, lines 17-31. Claim 29 is

directed to features discussed at least at Specification page 10, lines 19-30; page 12, lines 1-5; page 14, line 30 – page 15, line 4). Examination is respectfully requested.

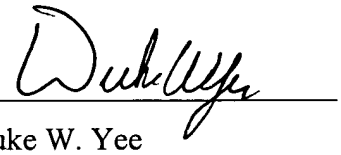
IV. Conclusion

It is respectfully urged that the subject application is patentable over the cited references and is now in condition for allowance.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

DATE: 5/30/03

Respectfully submitted,



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